



July 19, 2000

Mr. Doug Wheeler  
4300 Railroad Ave.  
Pittsburg, CA 94565

Dear Mr. Wheeler:

**HANFORD ENERGY PARK (00-SPPE-1) DATA REQUESTS NUMBERS 18 THROUGH 91**

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission (Energy Commission) staff requests that the GWF Power Systems Company supply the information specified in the enclosed data requests (Data Requests 18 through 91).

The subject areas addressed in these data requests are air quality, biological resources, cultural resources, hazardous materials management, noise, traffic, visual resources, and water resources. The information requested is necessary to: 1) understand the project, 2) assess whether the project will result in significant environmental effects, and 3) assess project mitigation measures.

Written responses to the enclosed data requests are due to the Energy Commission by August 19, 2000 or at such later date as may be agreed upon by the Energy Commission staff and the applicant. A publicly noticed workshop is scheduled in July, in Hanford to discuss these data requests and to have staff available to answer questions regarding the data requests and the level of detail required to answer the requests satisfactorily.

If you are unable to provide the information requested in the data requests or object to providing it, you must, within 15 days of receiving these requests, send a written notice of your inability or objection(s) to both Chairman William J. Keese, Presiding Member of the Committee for this proceeding, and me. The notification must also contain the reasons for not providing the information and the grounds for any objections (see Title 20, California Code of Regulations section 1716 (e)).

If you have any questions regarding the enclosed data requests, please call me at (916) 653-1614.

Sincerely,

Richard Buell  
Siting Project Manager

Enclosure

cc: Proof of Service 00-SPPE-1  
Hanford Staff

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Technical Area: Air Quality

Authors: Nasrin Behmanesh, William Walters

#### BACKGROUND

Staff's review and evaluate the accuracy and adequacy of assumptions made to estimate the emissions associated with the proposed project. The applicant has provided estimated emissions for both construction and operation phases of the project. Applicant's analyses of air quality impacts from emissions during the construction period require clarification in the following areas to verify the accuracy of the estimates.

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18. Section 8.1.4.1 (Construction Emissions) – Table 8.1-13 on page 8.1-31 presents a list of construction equipment and the estimated number of each equipment type expected to operate during each month of construction. However, in estimation of the construction emissions, the numbers of equipment were not taken into account. This can be noted by reviewing the tables in Appendix B that present construction exhaust emissions for different pollutants. In these tables, the monthly emission of each piece of equipment is identical throughout the months that they are in use. As an example, in the provided table for SO<sub>x</sub> construction emissions, it appears the data reflect just one air compressor (185 cfm) for all 13 months of utilization, while Table 8.1-13 indicates different numbers of air compressors (185 cfm) will be used in different months of construction period. Please incorporate the number of equipment and reevaluate the emission data for all equipment and all 5 pollutants.
19. Section 2.2.15 (page 2-36, third paragraph) -- This section indicates that construction activities will normally be scheduled from 6 am to 6 pm six days per week. However emissions were estimated based on 200 hours per month of construction activities (8 hours/day). Please provide rationale:
  - a. Why a different schedule is used for emission estimations?
  - b. Why the construction modeling was not modeled with hourly temporal factors when modeling 24-hr and annual concentrations?
  - c. Also, why annual average emissions are used to model worst-case 24-hr particulate concentrations for fugitive dust?
20. Please provide rationale for selection of the surrogate stack parameters used in the construction modeling, including the number of stacks selected. Specifically, justify the selection of these parameters with relation to actual stack parameters and exhaust buoyancies expected from the construction equipment.

#### BACKGROUND

Applicant's analysis of air quality impact from the operation of proposed project was evaluated based on some worst-case scenarios and assumptions. The worst-case scenarios include emission estimates, stack parameters, meteorological data and ambient air quality. Some of these assumptions require further explanation to ensure accurate analyses results.

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21. Section 8.1.4.2 (page 8.1-33, last paragraph) – The assessments of worst-case annual emissions from turbine operation were performed based on the following two scenarios: A) 3 hot startups, 20 cold startups, 20 warm startups, 200 gas turbine hold starts and 243 shutdowns per year (for all pollutants except NO<sub>x</sub>), and B) 20 cold starts and 20 shutdowns for NO<sub>x</sub>.
  - a. What are the bases for the assumed scenarios?
  - b. Please provide all calculations that show the highest NO<sub>x</sub> emissions would occur during Scenario B rather than Scenario A.
  - c. Please also define the term “hold start” and discuss how it differs from a cold, warm or hot start.
22. Section 8.1.4.3 (page 8.1-44, second paragraph) – Refined modeling, used to identify actual annual impacts of criteria pollutants from operational emissions, includes turbine/HRSG, the auxiliary boiler and cooling tower in the analysis. In this modeling, it is assumed that the auxiliary boiler operates 3,844.5 hours per year, and the turbine operates only when the auxiliary boiler is warming up or is not in operation (5,317 hours). Total annual operation time of the facility is estimated to be 8,760 hours, therefore the warming up time of auxiliary boiler is assumed to be 401.5 hours per year.
  - a. How was this warming up time estimated?
  - b. How was the annual operation time of 3,844.5 hours estimated? Is it a MAXIMUM or an average?
  - c. It is understood that these assumptions do not affect “worst case” emissions estimates, both for short term and annual period. However, it is not clear whether the simultaneous operating period was included in emissions estimates for auxiliary boiler or not.
23. The HRSG and auxiliary boiler stack diameters provided in the Section 2 scaled figure (Figure 2-4, page 2-6) are different than those used in the modeling analysis. Please confirm these stack parameters.
24. Please provide additional data/calculations to confirm the exhaust flow rates/velocities used in the modeling of the auxiliary boiler and cooling tower stacks.
25. Please provide the cooling tower concentration cycle calculation. Also confirm the recirculation rate. The recirculation rate is not shown consistently between Section 2 and Appendix B.
26. Please provide the existing GWF facility Potential to Emit and specific permit emission limits.

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**BACKGROUND**

The SPPE provides information on planned offset credits which includes some inconsistencies and need to be reviewed and revised.

**DATA REQUEST**

27. Section 8.1.5.1 (page 8.1-64) – Table 8.1-26, titled “Purchased Offsets Summary” and the table in Appendix B, titled “ERC Detailed Summary” should include identical information in the first four columns. However, comparison of these tables shows some inconsistencies. For example, a review of the PM<sub>10</sub> data, indicates the following inconsistencies:
- a. Six sources are selected for PM<sub>10</sub> credits supply, Table 8.1-26 indicates that 3 of these ERC sites are located at distances less than 15 miles from the HEP site, while the table provided in Appendix B shows only one of the sites (GWF, the existing facility) is closer than 15 miles to the project site. This parameter affects calculations of the required credits for the proposed project.
  - b. An inquiry of the SJUAPCD ERC inventory for PM<sub>10</sub> (reported 7/5/00 on SJUAPCD web site), showed the following inconsistencies with the data provided in Table 8.1-26. Only the PM<sub>10</sub> data were examined for this data request, please compare all of the offset requirements on all 5 pollutants to the current inventory available on SJVUAPCD web site ([www.valleyair.org/busind/pto/erc/erc\\_registry\\_pollutant.com](http://www.valleyair.org/busind/pto/erc/erc_registry_pollutant.com)), rectify all inconsistencies and correct to conform to SJVUAPCD inventories.

Owner		ERC No.		Location	
SJVUAPCD Report	Table 8.1-26	SJVUAPCD Report	Table 8.1-26	SJVUAPCD Report	Table 8.1-26
GWF	GWF	C-366-4	C036604	Corcoran	Corcoran
Anderson Clayton Corp	GWF	S-1171-4	1171-4	Pixely	Pixely
Not Found	GWF	---	1279-4	---	Earlimart
Fiberboard Corp.	Fiberboard Corp.	N-209-4	N-11-4	Turlock	Turlock
Hansen Bros.	Hansen Bros.	C-249-4	C-249	Raisin City	Fresno

**Technical Area: Biological Resources**

**Author:** Linda Spiegel

**BACKGROUND**

Staff needs more information to determine if the project will have adverse effects on biological resources.

**DATA REQUEST**

28. Please provide an analysis of the quality of the water from the supply well that will be used for makeup cooling water in the cooling towers. Include an estimation of the concentration of organic and metal constituents exiting the towers and their potential effects on surrounding vegetation.
29. Please provide a schedule and methodology for conducting pre-construction surveys for biological resources and an action plan in the event listed species are found on site.

**BACKGROUND**

The project will be located on potential San Joaquin kit fox and Fresno or Tipton kangaroo habitat. Therefore, the applicant will need to obtain an incidental take permit from the U.S. Fish and Wildlife Service, and possibly a 2081 permit from the California Department of Fish and Game. Also, the applicant will need to compensate for the loss of habitat.

**DATA REQUEST**

30. Please provide documentation that consultation with USFWS has been initiated or that a determination from USFWS that the project is not likely to adversely affect the species has been provided.
31. Please provide mitigation measures to compensate for the loss of potential San Joaquin kit fox (federally endangered, state threatened) and Fresno or Tipton kangaroo rat (federally and state endangered) habitat.

**BACKGROUND**

The SPPE states that Hanford Energy Park is expected to attract industries requiring process heat or electric power in the Kings Industrial Park or adjacent areas. These areas may represent potential habitat for listed species, yet growth inducing impacts are not adequately addressed.

**DATA REQUEST**

32. Please provide an aerial photo and habitat description of the area that could be built-out as a result of the available process heat or electric power generated by the proposed project. Also provide an analysis of potential growth inducing impacts on listed species.

**Technical Area: Cultural Resources**

**Author:** Jeanette McKenna, Gary Reinoehl and Dorothy Torres

**BACKGROUND**

Page 4, of Cultural Resources Confidential Appendix C, indicates that proposed HEP features will be located immediately south of the Slough of the Kings River and just north of the historic location of Tulare Lake.

**DATA REQUEST**

33. Please indicate the location of the slough of the Kings River and now dry Tulare Lake on Cultural Resources Figure 8.3-4. Please address in feet or meters how close these natural features are to the proposed project.

**BACKGROUND**

The confidential Appendix C identifies most of the cultural resources as historic. In order to conduct a complete analysis, staff needs information covering the time periods when the resources in question may have originated or might have significance in history. Staff has to determine whether the cultural resource retains sufficient integrity to be an historical resource and whether the project will be an adverse impact to a significant resource.

**DATA REQUEST**

34. Between the periods of 1806 and 1833 both the Spanish and Mexican governments were granting ranchos in California. Please provide a discussion of this time period as it relates to the project site and linears.
35. The City of Hanford was established in 1877. Please provide a discussion of the history of the Hanford area post 1877 and address the back ground of the following:
- a. the fenceline,
  - b. the Lakeside Ditch, including the time period the ditch was lined with concrete, and the integrity of this section of ditch, i.e. location, design materials, workmanship; setting, feeling, and association.
  - c. the telegraph poles, including a discussion which addresses
    - i) How the telegraph poles will interfere with the proposed transmission line route,
    - ii) How many telegraph poles have fallen down or how many have been replaced,
    - iii) What percentage of the telegraph poles have lost integrity,
    - iv) Do the date mark spikes indicate that any of the short poles were replaced with other short poles or have the short poles only been replaced with tall poles,

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- v) and how many date mark spikes remain on the telegraph poles, and
- d. the railroad or railroads, including whether the BNSF railroad track was originally the Southern Pacific line that figured in the founding of the City of Hanford.

**BACKGROUND**

Four potential historic resources were identified in the Cultural Resources section of the AFC which pre-date 1926. The resources are the following:

- Burlington Northern and Santa Fe (BNSF) railroad.
- Telegraph line
- Lakeside Ditch
- Fenceline

**DATA REQUEST**

36. Please evaluate the resources listed above in regards to the following:
- a. Association with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  - b. Association with the lives of persons important in our past;
  - c. Whether the resource embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  - d. Has yielded, or may be likely to yield, information important in prehistory or history.

**COMMENT:** Staff recommends that the fenceline and the Lakeside Ditch be record with the appropriate California Historical Resources Information System (CHRIS) and provide a copy of the Department of Parks and Recreation (DPR) 523 Form.

**BACKGROUND**

Page 10 of confidential Appendix C states that there are a number of industrial operations that border closely on the railroad right of way. Figure 1-2. Site Location Map identifies buildings labeled as Pirelli and Del Monte. Earth disturbance from heavy equipment and digging may impact historic buildings or structures and new project related structures in the vicinity of historic buildings and structures may diminish some aspects of integrity, e.g. setting, feeling, or association.

**DATA REQUEST**

37. Please identify and discuss all structures inside or within 200 feet of the Area of Potential Effect of the project site and project linears. Address the age and function of each structure and the distance of each structure from the project site and/or project linears.

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**BACKGROUND**

Page 3 of the confidential Appendix C makes a reference to an “addition” to the project.

**DATA REQUEST**

38. Please identify the project component referenced as an addition. If project description type information has not been provided regarding the “addition”, please provide it.

**Technical Area:** Hazardous Materials Management

**Author:** Ramesh Sundareswaran

**BACKGROUND**

An endpoint of 200 parts per million (ppm) with an exposure window of one (1) hour, has been proposed in section 8.12.3.1 of the SPPE application, for use in determining the radius of the area of concern. Staff routinely uses a 75 ppm endpoint with a 30-minute exposure for evaluation of the significance of impacts associated with potential accidental ammonia releases. It is staff's contention that the 200 ppm-1 hour criterion is a planning and emergency response guideline rather than an exposure criterion and should not be used to evaluate the acceptability of avoidable exposures. The 75 ppm-30 minute-exposure criterion on the other hand is designed to apply to accidental unanticipated releases and subsequent public exposure.

**DATA REQUEST**

39. Please provide the Offsite Consequence Analysis to include the 75 ppm-30 minute criterion and document the corresponding results.

**BACKGROUND**

Sections 8.12.4.1 and 8.12.4.3 of the application suggest that the aqueous ammonia would be transported by tanker truck to the facility. Design specifications of the tanker(s) are however not provided. Appropriately designed trucks can potentially reduce any significant releases of ammonia during a transportation accident.

**DATA REQUEST**

40. Please provide details of the truck design along with the inherent safety features.

**BACKGROUND**

Details of the computations for the aqueous ammonia release probabilities for the alternative release and worst-case release scenarios are unavailable in section 8.12.4.3.

**DATA REQUEST**

41. Please provide documentation of the full calculations and assumptions for the release of aqueous ammonia.

Technical area: Land Use

**Author:** Amanda Stennick/Patrick Angell (PMC)

#### BACKGROUND

The Application indicates that the 50-acre parcel on which the expansion would be located was purchased from the City Redevelopment Agency. No mention of the Redevelopment Agency's role, regulatory authority, rules, or other possible impact on the proposed project was discussed in the Land Use section.

#### DATA REQUEST

42. If any part of the proposed project is within a redevelopment area, identify the portion of the project within the redevelopment area, and whether the Redevelopment Agency having authority over that area has adopted land use regulations that affect actions within the redevelopment area involved. If applicable, indicate whether the proposed project would be consistent with such land use regulations.

#### BACKGROUND

Project components of substantial height include the Heat Recovery Steam Generator (50 feet), HRSG stack (80 feet), auxiliary boiler stack (40 feet), and cooling tower (35 feet). Height of other project structures was not identified. The application references the height and setback limitations established by the Kings Industrial Park regulations. The application indicates that building height must not exceed a 1:1 ratio between the distance from the front property line to the structural height. In addition, there must be a 50-foot setback along the front property line, at least the first 20 feet of which must be landscaped, and a 20-foot setback along the sides and rear of the property.

#### DATA REQUEST

43. Please provide the distances of all proposed structures to the property lines (include height of project structures not identified above).
  - a. Included a statement as to whether the project will comply with the Kings Industrial Park height and setback standards. If the project will not comply, discuss how the applicant will bring the project into compliance with the development standards (i.e., request for an exception or variance).

#### BACKGROUND

The application references a prior settlement agreement between GWF and the City of Hanford.

#### DATA REQUEST

44. Identify the "prior settlement agreement," and indicate whether the prior settlement agreement has any effect on land use at the proposed project site, or any effect on the application of any laws, ordinances, regulations, and standards (LORS). If so, identify

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the law, ordinance, regulation, or standard affected, and the manner in which the settlement agreement affects the law, ordinance, regulation, or standard.

**BACKGROUND**

The expansion area of the proposed project is located within the Kings Industrial Park, as to which Performance and Development Standards (Standards) have been adopted.

**DATA REQUEST**

45. Please identify the legal status of such Standards, and the manner in which the Standards have been made applicable to properties within the Kings Industrial Park.
46. Please identify the manner in which such standards are enforced, including, where appropriate, the governmental agency having authority for such enforcement.

**BACKGROUND**

Special districts exist in some areas to provide specific services to affected parcels (e.g., fire protection, groundwater management). The Application (see Section 8.14.2) discusses the potential impact on the Kings County Water District.

**DATA REQUEST**

47. Identify any special districts whose jurisdictional boundaries include any portion of the project. For each such special district, include the following information:
  - a. The purpose of the district, and its relation to the proposed project;
  - b. Whether the special district has rules or regulations that would affect the construction or operation of the proposed project, and the manner in which the applicant intends to comply with such requirements;
  - c. The name, address, and telephone number of the responsible person or contact at the special district.

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**Technical Area: Noise**

**Author: Tom Murphy**

**BACKGROUND**

In the SPPE, the applicant has concluded that noise impacts from project construction will be insignificant. This conclusion is based on projections of construction noise levels. Staff needs clarification of several of these projections.

**DATA REQUESTS**

48. Please label the noise monitoring locations in Figure 8.5-1 (Location of Ambient Noise Measurements) so that they correlate with the measurement location numbers listed in Tables 8.5-2 through 8.5-5.

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**Technical Area: Traffic and Transportation**

**Author: Steven Brown, P.E. and James Fore**

**BACKGROUND**

The Small Power Plant Exemption (SPPE) states that construction of the Hanford Energy Park (HEP) will result in a total of 142 vehicle trips per day on average and an estimated 208 vehicles per day during the peak construction period (page 8.10-6). This includes roundtrips to and from the site. It also states that the analysis assumes 20% of the workforce will carpool. The analysis indicates that 18 workers will carpool and the remaining 71 workers are each assumed to drive separate vehicles to the HEP site. According to Table 8.10-6 of the analysis the 71 workers not carpooling have been accounted for but the number of vehicles involved in the carpool have not been counted.

**DATA REQUEST**

49. Please clarify whether the 18 workers assumed to be carpooling are included in the estimate of vehicular trips to the plant or have these workers formed separate carpool groups? If the carpooling workers have formed separate carpool groups, then include their vehicles in estimated vehicular trips in SPPE Table 8.10-6.

**BACKGROUND**

The SPPE states that the preferred travel route for construction workers traveling from Fresno/Fresno County will include either SR 99 or SR 41 (page 8.10-17). SR 43 is also an alternate travel route for construction workers traveling from Fresno/Fresno County. Table 8.10-7 of the analysis does not include traffic impacts on SR 41 but does reference SR 43, nor does it specify what percentage of traffic traveling from Fresno/Fresno County will travel either SR 41 or SR 99.

**DATA REQUEST**

50. Please specify the percentage of project traffic traveling from Fresno/Fresno County on the different routes.

**DATA REQUEST**

51. Please explain why no construction worker traffic traveling from Fresno/Fresno County was assumed to use SR 43.
52. Please adjust the analysis and Table 8.10-7 when the traffic impact for SR 41 is included. If it is reasonable that some of the workers may use SR 43 from Fresno/Fresno County, please make the appropriate adjustments to the analysis and Table 8.10-7.

**Technical Area:** Visual Resources

**Author:** William Kanemoto and Eric Knight

**BACKGROUND**

Figure 8.11-8a shows the proposed switchyard site before construction. In this photo, a transmission line (PG&E's 115 kV Henrietta-Kingsburg line) is shown running parallel to the south side of Jackson Avenue. Figure 8.11-8b shows the switchyard site after construction. In this photo, the existing transmission line is not shown. Staff's review of the application did not identify any information that would indicate that the line would be removed as part of the HEP project.

**DATA REQUEST**

53. Please explain why the existing transmission line is not shown in Figure 8.11-8b. If part or all of the existing transmission line should be visible in Figure 8.11-8b, please correct the photosimulation.

**BACKGROUND**

Figure 8.11-9a shows an existing distribution line and transmission line running along 11<sup>th</sup> Avenue. According to the application, the alternate transmission line would run along the eastern side of 11<sup>th</sup> Avenue (p. 6-10).

**DATA REQUEST**

54. Please provide the heights of the poles for the existing distribution line and transmission line shown in Figure 8.11-9a.

**BACKGROUND**

The SPPE, in Figure 8.11-6b, states that the HEP site is not visible from the viewpoint on 10<sup>th</sup> Avenue southeast of the HEP site. According to the application, the nearest residence to the proposed power plant is located at the southwest corner of Idaho Avenue and 10<sup>th</sup> Avenue, approximately 3,200 feet from the site (p. 8.5-5). In addition, an undisclosed number of residences are located along both sides of 10<sup>th</sup> Avenue between Jackson Avenue and Iona Avenue, approximately 3,900 feet from the HEP site.

**DATA REQUEST**

55. Please indicate whether or not the proposed power plant is visible from other viewpoints on 10<sup>th</sup> Avenue, in particular from any of the residences along 10<sup>th</sup> Avenue, and characterize the conditions of visibility.

**BACKGROUND**

The SPPE provides a photosimulation of the proposed HEP as viewed from 11<sup>th</sup> Avenue (Figure 8.11-7b). The application states that existing GWF structures block most of the HEP from view (p. 8.11-21). Based on information in the Land Use section of the SPPE (Figure 8.4-3), the land immediately to the north and northwest of the HEP site is undeveloped. A

rural residence is located just north of the intersection of 11<sup>th</sup> Avenue and Iona Avenue (p. 8.4-31).

**DATA REQUEST**

56. Please indicate whether or not the proposed power plant would be more visible from other viewpoints on 11<sup>th</sup> Avenue (such as farther north of the location from where the photo in Figure 8.11-7b was taken), and characterize the conditions of visibility.

**BACKGROUND**

Staff requires additional information to verify the accuracy of the visual simulations of the proposed project provided in the application (i.e., is the project represented at actual “life-size” scale).

**DATA REQUEST**

57. Please indicate camera format, and lens focal length or width of the field of view (in degrees) for the photographs and simulations.

**BACKGROUND**

The SPPE (p. 8.11-17) states that “...the surrounding flat topography will cause views of the site to be relatively limited.” However, the flat topography of the study area is a factor in the visual *prominence* of tall, vertical structures in this landscape.

**DATA REQUEST**

58. Please indicate the conditions that would cause views of the site to be relatively limited.

**BACKGROUND**

The SPPE states that local residents who view the HEP will most likely be traveling either north or south on 11<sup>th</sup> Avenue or 10<sup>th</sup> Avenue on their way to or from the downtown area (p. 8.11-17). The alternate transmission line would travel along the eastern side of 11<sup>th</sup> Avenue, and according to the application the line “...would be visible to the sparse traffic along 11<sup>th</sup> Avenue...” (p. 8.11-23). The application (p. 8.11-17) compares traffic volumes on 10<sup>th</sup> and 11<sup>th</sup> Avenues and states that “... 10<sup>th</sup> Avenue is by far the most frequently traveled.” However, according to Figure 8.10-10 and Table 8.10-4 in the Traffic and Transportation section of the application, traffic volumes are higher on 11<sup>th</sup> Avenue. For instance, from Idaho Avenue to Iona Avenue, 11<sup>th</sup> Avenue has a traffic volume of 3,500 ADT (Average Daily Traffic) and 10<sup>th</sup> Avenue has a traffic volume of 1,700 ADT.

**DATA REQUEST**

59. Please resolve the inconsistency between the Visual Resources section and Traffic and Transportation section in regard to traffic volumes on 10<sup>th</sup> and 11<sup>th</sup> Avenue. Please explain if a higher traffic volume along 11<sup>th</sup> Avenue would change the

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conclusion that the alternate transmission line would have a less than significant visual impact (p. 8.11-23).

60. Please provide traffic volumes for 10<sup>th</sup> Avenue and 11<sup>th</sup> Avenue between Jackson Avenue and Idaho Avenue.
61. Please provide traffic volumes for Jackson Avenue (the location of the proposed and alternate switchyard sites) between 11<sup>th</sup> Avenue and 10<sup>th</sup> Avenue. Please characterize the types of travelers likely to use this portion of Jackson Avenue.

**BACKGROUND**

The SPPE (p.8.11-21) does not provide a determination of impact significance for night lighting.

**DATA REQUEST**

62. Please evaluate the significance of night lighting impacts of the proposed project, including a rationale and criteria for that conclusion.
63. Please provide a characterization of the existing night lighting environment, including existing night lighting of the GWF Hanford facility, visibility of existing night lighting in the site vicinity; and of the anticipated degree of visibility of lighting due to the proposed project, particularly from viewpoints on 10<sup>th</sup> and 11<sup>th</sup> Avenues.
64. Please indicate the number and location of lights, if any that could not be shielded to prevent fugitive, off-site light or backscatter.
65. Please explain whether the applicant would agree to use lighting controls such as switches and motion sensors to further reduce lighting impacts by minimizing lighting of areas that do not require constant nighttime lighting.

**BACKGROUND**

The SPPE does not address the potential for aesthetic impacts resulting from project-created vapor plumes. However, given the level, open agricultural landscape, such plumes could potentially be seen over a wide area, and might potentially contribute to cumulative changes in landscape character and quality in combination with other plume-producing sources in the vicinity.

**DATA REQUEST**

66. Please provide a characterization of any existing vapor plumes in the project vicinity.
67. Please evaluate the significance of potential visual impacts of the cooling tower vapor plumes, including the rationale and criteria for that conclusion.
68. Please provide a discussion of whether it is feasible to correlate the expected height, width, and length of the cooling tower plumes by hour of the day and day of the year.

If it is feasible, please provide an explanation of how to do so, perhaps including a table or tables.

**NOTE:** Staff recommends that the applicant use a computer model such as the Seasonal/Annual Cooling Tower Impact [SACTI] program to estimate the frequency of occurrence (i.e., during daylight hours, nighttime hours, during foggy or rainy conditions that could affect the visibility of the plumes) and magnitude (e.g., height, width, and length) of vapor plumes from the cooling tower. If such a model is used, the applicant should provide the model inputs and outputs in an electronic data format.

69. Please evaluate the significance of potential visual impacts of the HRSG stack vapor plumes, including the rationale and criteria for that conclusion.
70. Please provide a discussion of whether it is feasible to correlate the expected height, width, and length of the HRSG stack plumes by hour of the day and day of the year. If it is feasible, please provide an explanation of how to do so, perhaps including a table or tables.

**NOTE:** Staff recommends that the applicant use a computer model such as the Combustion Stack Visible Plume [CSV] program developed for the Pastoria project to estimate the frequency of occurrence (i.e., during daylight hours, nighttime hours, during foggy or rainy conditions that could affect the visibility of the plumes) and magnitude (e.g., height, width, and length) of vapor plumes from HRSG stack. If such a model is used, the applicant should provide the model inputs and outputs in an electronic data format.

#### BACKGROUND

A new 2.8-mile long pipeline will be constructed to supply natural gas to the proposed power plant. The proposed pipeline will tie into the SoCalGas Line 400 transmission pipeline along Hanford-Armona Road (p. 7-2). As stated in the SPPE, isolation block-valves will be installed at both ends of the proposed pipeline. In addition, SoCalGas will own and operate a metering facility to measure the gas supply to the HEP (p. 7-4). According to the application, residential subdivisions are located on both sides of the gas pipeline route along 11<sup>th</sup> Avenue between Houston Avenue and Hanford-Armona Road (p. 8.4-31).

#### DATA REQUEST

71. If the isolation block-valves are to be aboveground, please describe the valves' location, size, and visual characteristics.
72. Please describe the location, size, and visual characteristics of the gas metering facility.
73. Please discuss the potential visual impacts of the isolation valves and metering facility on the nearby residential subdivisions.
74. Given that residential subdivisions are located on both sides of the gas pipeline route along 11<sup>th</sup> Avenue between Houston Avenue and Hanford-Armona Road, please describe the extent to which equipment, materials, and personnel would be visible

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along the route and the length of time that a typical construction spread would be visible to adjacent residences.

**TECHNICAL AREA: Water and Soil Resources**

**Author:** Richard Sapudar

**BACKGROUND**

Well drawdown, potential well interference, and measureable changes in groundwater gradients near the project wells are primarily determined by the localized aquifer conditions relative to the average regional aquifer conditions. Additional information is needed on the construction and operational aspects of the well to be used to supply the HEP with groundwater.

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75. Provide details on the well to be used to obtain the groundwater, including the type of well, well depth, screened intervals, depth to water, well construction details, and any other information available, such as yield, drawdown, transmissivity, or hydraulic conductivity.
76. Provide an analysis of calculated drawdown that would be caused by the project well, which uses localized aquifer conditions for the groundwater basin, including available data for aquifer tests, well logs, well capacity tests, and previous hydrogeologic studies for the area.
77. Provide an inventory of all groundwater wells within a one mile radius of the project well, and provide the type of well (agricultural, domestic, etc.) well identification, well depth, depth to groundwater, depth of screened intervals, along with any other available well testing or aquifer testing data for these wells. Define to the groundwater gradient within this area.

**BACKGROUND**

The Tulare Lake Groundwater Basin from which the project will withdraw groundwater is currently in a state of overdraft to the extent of 229,000 acre-feet/year (AFC Section 8.14.2). HEP intends to mitigate the groundwater use of the project through a purchase of State Water Project (SWP) water from the Angiola Water District, and a series of agreements with Kings County Water District, J.G. Boswell Company, the Tulare Lake Basin Water Storage District, and the Peoples Ditch Weir. The same amount of water consumed by the project, approximately 850 acre-feet/year, will eventually be recharged to same aquifer from which groundwater is extracted by HEP for cooling purposes. Groundwater basins in a state of overdraft are often subject to adjudication of groundwater rights.

However, regardless of the amount of water contracted for through any particular SWP contractor, the actual amount delivered is subject to availability, which may vary based on precipitation and/or legal or regulatory factors. The project requires a secure, long-term, and reliable water supply.

Potable water and general service water will come from the City of Hanford domestic water supply system.

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78. Provide a copy of a will serve letter from the City of Hanford which states that they have available capacity and will supply the domestic and service water needs of the project. The letter should describe the specific volumes of water to be supplied, and any conditions or requirements for this water to be provided to the project.
79. The Angiola Water District (AWD) is not a SWP contractor. Identify which state water contractor is actually providing SWP water to AWD, and detail the entitlement that the Angiola Water District has for SWP water. Discuss the legal basis for the entitlement, and any restrictions or conditions that are applicable to the use of the water included in the entitlement. Provide information on the amount of the current entitlement, the amount currently allocated, the amount of unused entitlement currently available for purchase by HEP or others, and the amount of water HEP will purchase.
80. Discuss how much water has actually been delivered by the Angiola Water District over the past 20 years. Provide a table which compares the amount of AWD's entitlement, amount of water AWD is contracted to deliver to it's customers, and the amount of water actually delivered to those customers during this period of time. Discuss how the HEP water supply will be impacted by deliveries less than the amount contracted for, i.e., during a period of drought, or should reductions be made in the entitlement of the SWP contractor for legal or regulatory reasons. Provide this same information for the J.G. Boswell Kings River entitlement. Discuss the reliability of this water supply over the estimated life of the project.
81. Discuss the legal basis of the J.G. Boswell Kings River entitlement. Provide information on the amount of the entitlement, the amount currently allocated, the amount of unused entitlement currently available for use by HEP or others, and the amount of water HEP will purchase. Discuss any restrictions or conditions necessary for the use of the water included in the entitlement.
82. Describe the contracts and/or agreements necessary for the groundwater mitigation program. Identify the parties in each contract, the principal responsibilities of each party, the source and amount of water involved, the final disposition of this water, and the term of the contracts or agreements. Provide a contact person, address, and telephone number for all parties involved in the groundwater use mitigation program.
83. The AFC (Section 8.14.4.1) indicates that the water used by the HEP will be recharged at a ratio of 1:1. Due to seepage, evaporative, or other losses of recharge water during conveyance from the source(s) to the recharge area, recharge ratios greater 1:1 would be expected. Discuss the assumptions that were made to arrive at this value, and the appropriateness of the 1:1 use-to-recharge ratio proposed for the HEP groundwater mitigation program.
84. Provide a status report on the progress of the contract negotiations for the water purchase and exchange agreements. The reliability of the water supply should be confirmed at least 30 days prior to the date scheduled for the Final Staff Assessment for the HEP.

**BACKGROUND**

A storm water and erosion management plan which includes the HEP project site, and any associated linear or other facilities, such as transmission lines, pipelines, lay-down areas, staging/storage , or construction areas, is needed.

85. Provide a stormwater and erosion management plan for the facility and for any associated linear facilities, including transmission lines and pipelines. The plan should include any lay-down areas, borrow areas, access roads, construction, staging or storage areas associated with the project, and their estimated acreage. Include any increase in impervious surfaces and runoff volume, along with a discussion of BMPs and revegetation schemes to be used to manage stormwater and erosion both during construction and during operation. Discuss the capacity of the proposed stormwater system to handle the flows estimated to result from the project, and the impact of these flows on both the stormwater collection/treatment/discharge system, and on the properties of the stormwater discharge itself.

**BACKGROUND**

The HEP project will discharge a wastewater stream of approximately 86 gpm to the City of Hanford's Publicly Owned Treatment Works (POTW) through an industrial wastewater discharge permit and an existing wastewater line which currently serves the existing cogeneration plant.

86. Identify the waters or impoundments to which the Hanford POTW discharges its effluent, the level of wastewater treatment, the range of flows, and the average daily flow. Identify the WDR's held by this POTW, and any violations or exceedances of the permit conditions for the preceding period of 1 year. Provide a copy of these WDRs.
87. Expand Table 8.14-2 to include all constituents listed below:
- |                              |           |                         |           |
|------------------------------|-----------|-------------------------|-----------|
| antimony                     | calcium   | chromium                | copper    |
| iron                         | lead      | nickel                  | vanadium  |
| zinc                         | arsenic   | sodium                  | barium    |
| boron                        | cadmium   | selenium                | manganese |
| silver                       | beryllium | cobalt                  | sulfide   |
| chloride                     | sulfate   | magnesium               | potassium |
| mercury                      | carbonate | nitrate – nitrogen      |           |
| total dissolved solids (TDS) |           | electrical conductivity |           |
88. Detection or reporting limits for metal and trace elements should be comparable to those obtained using EPA Method 200.8, Inductively Coupled Plasma – Mass Spectroscopy.
89. Provide calculations of the estimated concentrations of all constituents of concern in all waste or process water streams, and in the total wastewater discharge to the POTW.

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The constituent concentrations in these waste streams will be increased in proportion to the 5.3 cycles of concentration.

90. Provide all information required by the WDRs held by the POTW to accept the project's wastewater for this category of industrial discharge, and all information required by the City of Hanford municipal code Chapter 13.08. Discuss any pretreatment standards, and any constituent concentrations that the project's wastewater discharge must meet at the POTW.
91. Since the new wastewater discharge will be combined with the existing wastewater discharge, discuss the capacity of the existing wastewater discharge line to handle the combined discharges.